RS
Reports
SD11
.P92
5th
1915

INTERMOUNTAIN STATION
Central Reference File
No. X40.73 x 6140

FIFTH ANNUAL REPORT

SEASON OF 1915

--o--

PRIEST RIVER FOREST EXPERIMENT STATION

--o--

by

Donald R. Brewster

Forest Examiner in Charge

--o--

December 31, 1915.

--o--

General View of Experiment Station Buildings and Clearing

Near View of Dwelling Cottages and Surrounding Grounds

FIFTH ANNUAL REPORT

PRIEST RIVER FOREST EXPERIMENT STATION

SEASON OF 1915

PART I

ADMINISTRATION

--o--

1. General Progress

The fourth growing season since the establishment of the Station has now been completed. It is felt that in 1915 more rapid strides have been made all along the line in the Station work than in any previous year. The organization and personnel of the force has been more satisfactory than ever before, the members have become more experienced and more capable of working independently, the equipment has been rounded out, the number of projects directly assigned to the Station has been materially reduced so that attention could be concentrated on the most important lines of work, and the results have been correspondingly greater than in the preceding seasons.

2. Organization and Personnel.

The permanent organization during 1915 has consisted of the following men:

D. R. Brewster, Forest Examiner in Charge.

J. A. Larsen, Forest Examiner, specializing on the forestation and type studies carried on at the Station.

A. O. Benson, Forest Examiner, specializing on larch management work, October 9 to December 31.

E. C. Rogers, Forest Examiner, specializing on the forestation work at the Savenac Nursery and Placer Creek Planting Area; transferred for administrative reasons to the section of Planting July 1 with no change in work assigned him.

Lee Stratton, Forest Clerk, general clerical and administrative assistant, handling the office and investigative routine, improvement, maintenance, and fire-protective work.

Douglass MacDonald, Forest Guard, general assistant on outside work, care of horses, maintenance, improvement, and fire-protective work; assigned to Ranger Conference two months from January 15 to March 15.

The following temporary men were employed at different times:

T. S. Hansen, Field Assistant, assistant on forestation and management studies, April 15 to December 11.

H. P. Rigdon, Field Assistant, assistant on forestation type studies, June 5 to September 5.

L. G. Hornby, Field Assistant, assistant on forestation work, September 17 to December 4.

C. F. Bliss, Forest Assistant, on white pine management studies July 5 to August 7.

J. D. Lamont, Field Assistant, assistant to Rogers on forestation work at Savenac Nursery and Placer Creek Area, April 15 to July 1, at which time he was transferred to the section of Planting.

C. S. Brewster, Field Assistant, on white pine management work August 15 to September 4.

The spring forestation and management work, reports, working plans and administrative work occupied the time of director until July, but from that time on he was able to devote most of his time to the management studies, spending two months on the Coeur d'Alene Forest studying methods of cutting in the western white pine type, one month at the Station working up data and making field studies, and two weeks on the Flathead, Blackfoot, Kootenai, and Pend Oreille Forests studying natural reproduction and methods of cutting in the western larch-Douglas fir type. The balance of the year was spent largely in working up data, writing reports and working plans, and to some extent on administrative work connected with operating the Station and the 1916 Ranger Conference to be held at the Station from January 15 to March 15.

From two to three technical men were employed at the Station during the entire season from April to November.

largely on the seed, nursery, and planting studies, grouped together as "forestation studies." This force also carried the current work on the study of natural reproduction and study of types with the assistance of the Clerk who devoted about two hours a day to taking readings and making reports in connection with the meteorological study of types. By giving this much time to the forestation studies it has been possible to complete the field work on a considerable portion of them. The time required on such work in 1916, will thus be materially reduced, with the ultimate idea of eliminating most of the forestation projects from the Station program as soon as present installations can be closed and transferring them to Forest Examiner Rogers to be carried on at the Savenac Nursery and Placer Creek Planting Area under the administrative supervision of the Section of Planting in the District Office.

This transfer of supervision of the Savenac and Placer Creek forestation work was made at the suggestion of the director of the Station in order that the Station force might be relieved of considerable unnecessary administrative detail and thus have more time to devote to investigative work and in order that the Chief of Planting might keep in closer and more direct touch with the bulk of the nursery and planting investigations, since he is directly interested in the problems involved and able to

render valuable assistance in the details of the work. For the same reasons and the additional reason that facilities for carrying on nursery and planting studies are much better at Savenac and Placer Creek than at the Experiment Station and better results can be obtained in a shorter time, plans were made at the same time to transfer the bulk of the future work on the forestation projects from the Station to Forest Examiner Rogers and the Section of Planting. In accordance with these plans, all work now installed and running at the Experiment Station will be concluded at the earliest time consistent with thorough work and no new work will be started unless, as in the case of a few projects, facilities at the Station make it possible to carry on the work there better than elsewhere.

The time of Hansen, from July on, and the entire time of Bliss, Benson, and C. S. Brewster were devoted to management studies and it was possible in this way to give considerable more time to this branch of the work than in previous years, although there is still room for improvement in this respect.

3. Station Territory

Field Assistants F. R. Paine and C. E. Sutton were assigned to the Station during February, March, and most of April, and were able to complete the reconnaissance of

Section 24 and all but about three days work on Section 19 of the Station territory. The work was done by the specially intensive method adopted for the Experiment Station, running strips every five chains, sketching on a scale of 8 inches to the mile with 20-foot contour interval, and taking 1/10th acre sample plots in each different type or age-class. The men averaged about a mile of line a day on days when it was fit to work and did most of the work on snow-shoes.

The reconnaissance and map are thus practically complete for the original area assigned to the Station - 4370 acres. During the year, the State of Idaho has consented to relinquish their selections on 2750 acres of additional territory at the head of the Benton Creek and the South Fork of East River in lieu of the right to select an equal area elsewhere. This addition completes the Experiment Station watersheds for management purposes and makes a total area of 7020 acres. Whenever men are available for the work, it is recommended that provision be made for completing the reconnaissance and map in order that a silvicultural working plan for the area may be made and the work of active development and utilization may be started.

The matter of developing the Station administrative unit was discussed in July at a conference between Assistant Forester Clapp, Assistant District Forester Preston and the Director of the Station. It was felt that this development

was important and woul eventually become one of the big features of the work and should by all means be kept in mind so that progress could be made whenever opportunity offered. On the other hand it was something that need not be hurried and which could and should be subordinated to urgent investigative work now on the program such as the study of methods of cutting and other management problems. It was therefore decided that the time to be devoted by the Station force during the next few years to intensive development and management of this area be strictly limited to fire protection, a small amount of improvement work in the way of roads and trails each year and what little incidental time may be available for working up the reconnaissance and other data essential to a working plan. The fire protection and improvement work can be largely handled by the Clerk and outside man, leaving the Officer in charge free to devote most of his time to the investigative work. This policy will of course delay the sale of timber for a few years but such delay will do no harm.

4. Fire Protection

The 1915 season was one of only medium dryness with rains scattered through July and August and no fires occurred which threatened the Station area. Protection was much more thorough and better organized than ever before owing to the

trail and telephone line built in 1914 and the maintenance of both a permanent lookout in cooperation with the Kaniksu Forest and a highland patrol at the heads of our watersheds. In addition the Kaniksu Forest maintained a smoke chaser at the Benton Ranger Station on the Station area who did good work on fires along the County road, reported by the lookout.

The Supervisor of the Kaniksu was very much pleased with the results obtained from the lookout work and considers it the most effective lookout on the Forest when combined with the smoke chaser on the road. After trying it out this summer he is more than willing to take over the entire responsibility for the lookout work and is planning to cooperate with the State in maintaining one or two men at this point in 1916. A special effort should be made to provide a standard lookout cabin and tower at this point next summer, if possible. Owing to trees in the way it will be necessary to elevate the observation point 15 or 20 feet above the ground. Because of its accessibility to visitors and the fact that it will form part of the model protective system to be established at the Station the cabin and tower should be models of their kind, carefully planned and well constructed.

It is felt that the plan of last summer of having a special highland patrolman responsible to the Experiment Station and working in cooperation with the Kaniksu pro-

tective force worked very well and should be followed in 1916. It has the advantage of giving the Station a man who will furnish the most intensive kind of patrol and who can be fitted into the trail work on the area during safe weather.

5. Ranger Conference

The assignment of Rangers to the Experiment Station during the winter months, mentioned in the 1914 report, was tried out last winter by detailing twelve rangers from several of the western Forests, together with a Supervisor to take executive charge of them, from January 15 to March 15, 1915.

Although the assignment was distinctly an experiment, it was on the whole a success and a benefit to the men and the experience gained in working out the details the first year has made it possible to plan the second annual assignment for 1916 so that it will unquestionably be very effective and valuable. About one-third of the men's time was devoted to straight educational lectures and field work, and one-third to the erection of a wagon shed and storehouse for the Station, clearing of land for fire protection, helping install experiments, and other Station work having an indirect value as experience. The remaining third was used in non-productive time required for cutting wood, ex-

tablishing and maintaining camp, hauling supplies, etc.

The 1916 assignment, which will be termed a "Conference," will be largely educational, with only about a quarter of the time devoted to improvements and non-productive work. The first two weeks will be spent in the erection of a lecture room and bunkhouse for the use of the Rangers and the remaining six weeks will be devoted solidly to instruction on the principal features of a ranger's work including fire protection, improvements, surveying, timber sales, and reports, with competent, specially selected, instructors for the different portions of the program. A Supervisor is to be given entire responsibility for conducting the project. It will thus mean little interruption to the winter work of the Station force, and it is thought that the two lines of work can be conducted at the Station with mutual advantage. For further details, reference is made to a complete report on the Ranger Conference filed under "O, Supervision, Ranger Conference."

6. Improvements.

During 1915 a third dwelling cottage was built for one of the permanent men by enlarging and remodelling the storage shed built near the greenhouse in 1913. Although not as attractive on the outside as the other two,

cottages it is one of the most comfortable and convenient inside and in view of the urgent need at the time for additional quarters and the economy of time and funds effected by utilizing the old building it is felt that the action was justified. One possible objection is its proximity to the other two cottages which reduces the amount of privacy to some extent but at the time the work was done it was a question, with the money available, not of privacy but of providing any kind of quarters at all in the shortest possible time. If any other site had been selected, it would have been necessary to make the house smaller, to leave it uncompleted, to dispense with bathroom and plumbing and to make it much less comfortable in every way. The present site combines reasonable privacy with convenient use of garden, root cellar, woodshed, and attics for hanging clothes in the winter, has made it possible and inexpensive to install plumbing and water and attach the drain to the present septic tank, and under the circumstances there appeared only one possible decision.

The two-inch wood pipe water supply main was replaced for the upper 1800 feet with 10-inch wood pipe and the two-inch pipe removed was used for extending the system to the Benton Nursery where water was badly needed for seedbeds

and transplants. The 10-inch pipe adds to the pressure and capacity of the system and will eventually make it possible to install a small hydro-electric plant by adding a few hundred feet more of the same size pipe to each end of the present section. Power enough for fifty lights can then be developed without impairing the water supply feature of the system and at a cost which is not at all unreasonable considering the numerous uses to which the power can be put at a Station of this kind. It will be particularly useful for all kinds of laboratory purposes such as lighting, heating, photographic work, and operation of water baths and automatically regulated germinating devices. These intensive laboratory features of the work will each year become more important and the possession of abundant and inexpensive electric power will add greatly to the possibilities of such work. The project is now planned and started and every opportunity of bringing it nearer completion should be taken advantage of. When this system is completed the effective water pressure will be greatly increased which will furnish a very valuable means of fighting fire in the Station buildings.

The area of cleared meadow land was more than doubled during the year and several tons of timothy, clover, and oat hay should be produced in 1916. Between one and two

acres of additional land are still available and will be cleared with the heavy team whenever opportunity offers, after which the amount of additional hay to be purchased will be very small.

A portion of the cleared area around the cottages was plowed and planted with ten apple trees furnished in 1913 by the Bureau of Plant Industry.

During the Ranger Conference, a wagon shed and storehouse, 20 x 28, with room for two wagons and various farming implements on the first floor and a carpenter shop and storeroom upstairs, was built by the Rangers. This building has proved very useful.

Material has been purchased for a wood storehouse near the cottages to be built by the Rangers in 1916. The building will be 20 x 40 and will have room on the ground floor for a large supply of wood and an ice-room, while the upstairs portion has been specially planned to provide a suitable lecture room 17 x 24, and a drawing room 17 x 10, for the use of the Rangers.

The Rangers will also erect a bunkhouse 26 x 40 containing a dormitory room large enough for sixteen men and a second room which can be used either for a kitchen and mess, or for clothes lockers, bathing facilities and wash room. This building will be available in the summer

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PRIEST RIVER EXPERIMENT STATION

ADDRESS REPLY TO
DIRECTOR
AND REFER TO:

RS
Reports, Priest River
Annual,-1915

PRIEST RIVER, IDAHO

February 26, 1916.

Director,
Utah Experiment Station,
(Through the District Forester)
Ephraim, Utah.

Dear Sir:-

A copy of the annual report of this station for 1915 is enclosed for your information and files.

Very truly yours,

D. R. Brewster

In Charge.

Enclosure.

for use in connection with the Station work, if extra men are needed for any purpose.

It was originally planned to do considerable trail work in 1915 but the extra funds required to complete the dwelling cottage and install the 10-inch pipe cut this down to one-half mile of completed trail and one-half mile of trail clearing, besides a section of trail about one-half mile long built by the patrolman at odd times, to make it easier for him to get water.

An improvement allotment sufficient to keep a crew of five men busy on trails, roads, and other improvements during the worst part of the fire season should be made in 1916 in order to open up the area and provide an auxiliary fire-fighting force.

Cottage No. 3, Showing Remodelled Storehouse in Foreground

4 Horse Power Gasoline Drag Saw Outfit Mounted on Skids

7. Equipment

The principal additions to the station equipment consisted of a combined soil and air thermograph already on hand, a set of instruments for soil physics analyses, several Livingston atmometers and apparatus for studying evaporation, and a complete outfit for plant histological work including apparatus, instruments, stains, and reagents.

The equipment for improvement and outside work was increased by the addition of a scraper and various small shop and garden tools and by the transfer of a draft horse and double harness from the Clearwater Forest. This horse has been mated with the draft horse transferred from the Kaniksu in 1914 to make an excellent heavy team for clearing and all kinds of heavy work. The heavy team and driving team were combined into a four-horse team for hauling the two carloads of lumber, pipe, and other material needed for the improvement work in 1915 and cut the cost of hauling to less than half what it could be hired for. This large team will more than earn its keep during the next year or so but by that time the heaviest improvement work will be completed and it will be possible to transfer or dispose of the horses, keeping only the driving team. A heavy wagon strong enough to haul two tons is needed as it is necessary to hire one now. It may be possible to transfer such a

wagon from some Forest if it is no longer needed.

It will be desirable to purchase some farming implements such as disc harrow, drag harrow, hay rake and mower during the next year as such tools are needed frequently during the summer and it is difficult and unfair to the owners to borrow from our neighbors.

8. Accounts and Records

At the conference with Mr. Clapp and Mr. Preston in July it was decided to reduce the clerical work at the Station to an absolute minimum and in line with this plan the allotment control and cost-keeping system was simplified as much as was possible considering the necessary fiscal records and reports to be made. The principal simplification in the cost-keeping was effected by reducing the formerly numerous forestation cost-keeping projects to three,- seed studies, nursery studies, and planting studies. This has worked out very well in practice.

9. Investigative Progress

A general statement of the results accomplished during 1915, is given under the following heads:

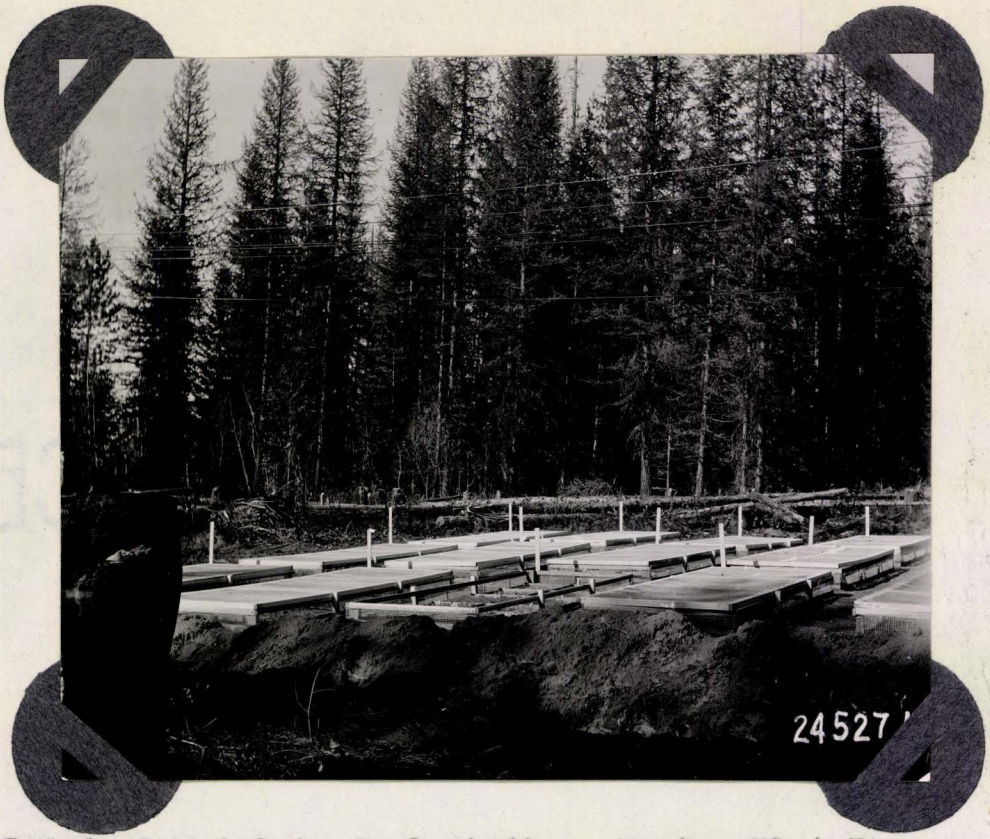
a. Seed Studies

Thirteen seed studies were included on the Station program. Of these yellow pine and white pine seed extraction

have been completed except for the preparation of the final report which will be issued this winter. Important information on germination of yellow pine, white pine, Douglas fir, Western larch and Engelmann spruce was obtained in comparing greenhouse and nursery germination. In the study of source of seed, plantations of yellow pine, white pine, and Douglas fir from different sources were under observation and stock from other sources is being grown for making additional plantations. The seed project which was given most time and emphasis, however, was the study of methods of stimulating Western White pine germination. Several hundred different treatments and tests were made during the summer with very interesting and valuable results which established beyond question the principal cause of delayed germination,- impermeability of the seed coat. With this information as a basis, the discovery of some treatment which will overcome the delay in germination is only a matter of time and the study is being vigorously pushed with stratification and mechanical treatments, including a number of greenhouse tests being run this winter.

b. Nursery Studies.

The Station program, as distinguished from the work at the Savenac, included 18 sub-projects. Very little new work was attempted and most of the work consisted of growth tests in the transplant beds of experiments carried on in



15 Beds Devoted to Seed Studies, Benton Flat Nursery.

4-Year-Old Plantations Western Yellow Pine Source of Seed Study.

1913 and 1914. The field work on these is now mostly completed. The results include information on depth of cover, season to sow, value of seed grading, methods of sowing, degree of shade, watering, root development, time of transplanting, and methods of retarding spring growth, with one or more of the following species,- Western yellow pine, western white pine, Western larch, Douglas fir. The principal new work was a test of ice-house storage as a method of retarding spring growth of white pine. The method used of placing the roots of the plants in the cold, moist, sawdust just above the ice does not appear to have much value for the purpose, since the best of the stored stock did not do as well as that taken direct from the nursery to the field late in the season. It will be possible to close out most of the nursery study work at the Station during the coming year, with the exception of a few sub-projects which the Station is especially fitted to carry on, and little or no new work is planned along this line.

c. Sowing and Planting Studies.

A total of about 200 field plots containing about 30,000 plants, spots or sown squares were examined and counted, the later installations in the spring and fall, the earlier ones in the fall only. This will be the final count on more than half of the work as far as the investigative project is

concerned and it will be possible to close out a number of the sections by issuing final reports during the year. The balance of the work includes several large plots established in 1913, 1914, and 1915, which must run several seasons more in some cases. An effort will be made to close all of this work as soon as consistent with thoroughness, and little or no new installations are planned, as this work can be carried on to better advantage in the future at the Placer Creek Planting Area and Savenac Nursery.

Particular attention has been paid to the study of classes of planting stock, both as to age-class and size-class. In the thorough age-class tests of 1914 and 1915, 1-2 transplants are making a somewhat better survival record than 2-0 seedlings, particularly on the more severe sites, and every additional year that the 1912 age-class tests run gives new evidence that the survival and growth of the transplants is somewhat better than of the seedlings. Considering the fact that seedlings are much cheaper, however, they have made an excellent record in cost per surviving plant, and appear desirable for the better sites at least. Yellow pine and white pine stock, closely graded by size, showed that the survival of the smallest 10 to 25 per cent was very noticeably lower than that of the larger stock, and growth is much poorer.

6-Year-Old Selection Cutting, Kennedy Sale, Coeur d'Alene N.F.

Seed Trees on 6-Year-Old Selection Cutting, Coeur d'Alene N.F.

On a basis of survival alone the cost of culling just about offsets the decrease in death rate, so that the cost per surviving plant remains about the same. If later counts show that the present poorer growth of the smaller plants continues, it seems probable that culling of from 5 to 15 per cent may be profitable on the basis of wood production if not of survival.

Extensive experiments show that planting nursery stock is a much cheaper, surer, and more satisfactory method of reforestation than sowing seed, whether broadcast or in spots. Excellent results have been obtained uniformly in planting work, while results from sowing, even the most expensive method,- seedspotting,- show many failures, and the few successes appear to be erratic and not to be depended upon.

d. Management Studies.

Special emphasis was laid on the study of methods of cutting in the Western White pine type. Two additional permanent sample plots of four acres each were installed on different areas on the Coeur d'Alene Forest, and a marking study of a 1914 cutting was made in which 25 acres were intensively mapped to show what was cut and what was left on the ground. On the basis of our work and the observations of a special marking board, recommendations were made for a radical revision of the white pine marking rules to make them more

Uncut Seed Strip, 5-Year-Old Strip Cutting, Coeur d'Alene N.F.

Seedlings on Reproduction Strip, Marked with wire pins,
Perm. Sample Plot #3, Clean Cut Strips, Coeur d'Alene N.F.

applicable to conditions on the ground and more suitable for the purposes for which they were intended.

Three members of the Station force formed part of a marking board on the Flathead and Blackfoot Forests and, with the observations made as a basis, drew up revised marking rules for the larch-Douglas fir region. Further detailed study of reproduction, seed production, etc. was made in this region and a report on Western larch and its associate species, embodying all of our present information, has been prepared.

An extensive and thorough study of the length of time white pine seed remains viable under natural storage conditions has been installed.

A closely controlled study of natural reproduction of white pine and associate species is now completed after three seasons and a final report can be prepared during the winter. Valuable information on germination and survival in their relations to climatic and physical factors has been obtained.

A study of white pine seed production was made by collecting seed from individual trees and observations were made on a number of areas of the nature of the reproduction coming in on burns and cuttings.

Further observations of damage from snow and other

Clean Cutting With Groups of Seed Trees, Coeur d'Alene N.F., 1914, Typical Portion of 25 Acres Mapped in Marking Study.

Steam Logging on U-Cellee Gulch, Coeur d'Alene N.F., 1915, Showing Clean Cut Strips Necessary for Overhead Cable Logging.

causes were made in the series of four half-acre thinning plots established in a white pine-larch stand at the Station in 1914. Careful observations of seed production by estimating the number of cones per tree were made in these plots and will be continued each year indefinitely as a record of amount of seed and periodicity of seed years.

e. Meteorological Study of Types.

Records on the four permanent meteorological stations were taken during the year and a fifth temporary station was added during the growing season. Data has been tabulated to date and shows a very close uniformity between the relationships of the Stations in the different seasons. This project can be closed at the end of the winter and data will be worked up into a final report during 1916. The difference between the physical conditions in the three important timber types of the region,- Western white pine, Western yellow pine, and Western larch-Douglas fir,- has been established and the information will be used as basic data for other management studies.

f. Western Larch Tree Study.

Since his assignment to the Station, Forest Examiner Benson has devoted his entire time of three months to this project, including four weeks in the field, and has all available information summarized into a complete report in the species and its management, which will be available as

a basis for further work. Since Benson has asked for assignment to other work, the project is to be turned over to the Experiment Station when he is transferred and will be vigorously pushed as one of the most important projects, along with the study of methods of cutting and natural reproduction. It is thought that in this way it will be possible to gather the necessary information needed to complete this tree study with the greatest possible economy of time and expense. The Station will in any case be in constant contact with the larch work and the assignment of the project to a special investigator would to a large extent tend toward duplication of work and expenditure and would involve going over much of the ground twice.

10. Investigative Policy.

The policy governing the investigative work of the Experiment Station has been quote definitely worked out and crystallized during the past year and can be summarized in the following way:

1. Time and resources will be concentrated as far as possible on management studies,- methods of cutting, natural reproduction, thinnings, and the larch tree study.

2. With the exception of a few studies, mostly on "Seed" group, all forestation projects now being carried on

at the Experiment Station will be closed at the earliest possible moment and the assignment and work transferred to Forest Examiner Rogers to be carried on at Savenac Nursery and Placer Creek planting area. The director of the Station will, however, keep in general touch with the work being conducted by Rogers by review of working plans and reports and one or two visits to Placer Creek and Savenac during the year.

3. The amount of administrative work connected with the protection and administration of the Station area and improvement of the Station itself will be reduced to an absolute minimum and the organization will be so arranged that the Station clerk will relieve the director of all of this kind of work except the most general supervision, thus leaving him free to devote practically his entire time to investigative work.

4. It is felt that present approved projects are general enough to cover all important investigative needs of the District and are more than sufficient to occupy the entire time and resources of the Experiment Station for several years to come. No new projects are recommended, therefore, and an effort will be made to reduce the number of those now on the program by completing and eliminating some of the less important ones in as short a time as is

consistent with thorough work.

5. By giving a certain amount of detail in the annual project reports to the District Committee, it is felt that additional progress reports during the year will not be necessary for most of the projects. This will avoid duplication of work and greatly reduce the amount of time and clerical work needed for report writing, thus leaving the force more free for productive investigative work.

6. It is felt that all active projects should be brought up to date as soon as possible in the matter of having complete working plans prepared in advance of new work and in having all data on hand tabulated and compiled in compact and readily accessible form. Working plans should be detailed enough to make it possible for new men to take over the work with a minimum loss of time and results, in case of necessary and unexpected changes in personnel.

If time is insufficient for both kinds of work, the preparation of working plans should take precedence over the preparation of reports on past work or closed projects, although the latter should not be lost sight of and should be completed as soon as possible. Eight copies should be made of all working plans and final reports to provide for possible exchanges of such plans and reports with other Districts in line with the recommendations of the Central Investigative

Committee in the report of March, 1915

7. In the Lodgepole Pine management work on the Deerlodge Forest, the director of the Experiment Station will cooperate closely with Forest Examiner Whitney and the Forest Supervisor by review of working plans and reports and by one or two visits to the Forest during the season. The responsibility for planning and conducting the work will, however, remain entirely with Mr. Whitney and the Supervisor.

8. In general, every effort should be made to tie the work of the Experiment Station as closely as possible to the timber sale work of the District. To this end, the director of the Station will utilize every opportunity for becoming better acquainted with the various branches of administrative silvicultural work, such as marking, reconnaissance, appraisals, brush disposal, and timber sale administration. In this way he will be better able to plan the investigative work so that it will more nearly meet the needs of practical silviculture, lost motion will be reduced, and the work that the Station is doing will be of maximum value to the District. An effort will be made to hold the work to a strictly practical basis, using the more purely scientific and very intensive methods of attacking a problem only when such work has a clearcut

practical end in view.

10. Costs and Allotments.

Owing to the very limited time available for the preparation of project reports, between the close of the field season and the date for submission of the annual report, it has been impossible to prepare a detailed statement of costs. It is furthermore thought that such a statement should be prepared in the form of a separate report to the District Forester since the detailed figures are not of sufficient general interest to make desirable their inclusion in this annual report.

As a general guide to the expenditures for the present Fiscal Year 1915-16, the allotments are listed below:

Appropriation	Purpose		Amount
Silvical Investigations,	Salaries - - - -	$4640	
	Expenses - - - -	1210	
	Total	$5850	$5850
Nat. Forest Planting,	Salaries - - - -	$2000	$2000
General Expenses,	Salaries - - - -	$ 250	
	Travel - - - -	150	
	Fire Prevention	500	
	Miscellaneous -	200	
	Total	$1100	$1100
Improvement of Nat. For.	General Imp. -	$1000	$1000
	Grand Total for Year - - - -		$9950

This statement excludes $950 allotted from General Expense but spent on administrative work not connected with the Experiment Station and also $400 allotted for the erection of a bunkhouse and lecture building for the Ranger Conference.

As far as the needs of the work can be predicted at this time the funds needed for the Fiscal Year 1916-17 will be as follows:

Appropriation	Purpose		Amount
Silvical Investigations,	Salaries, - - -	$5000	
	Expenses - - -	1250	
	Total	$6250	$6250
National Forest Planting,	Salaries - - -	$ 700	700
General Expenses,	Salaries - - -	$ 350	
	Fire Patrol - -	225	
	Miscellaneous -	425	
	Total -	$1000	1000
Improvement of Nat. For.	General Improvements - - - -	$1000	1000
	Grand Total -		$ 8950

11. Conclusion

Reports for the 116 silvicultural projects and sections of projects listed in the approved program or proposed, have been prepared and submitted to the District Investigative Committee and will be included in its report as

modified in accordance with the findings of the Committee.

It is recommended that the foregoing plans for the development of the Station and its work be approved and that action be taken to provide for the various needs of the work as outlined.

Respectfully submitted to the District Forester.

DONALD R. BREWSTER

Forest Examiner in Charge.

Priest River Experiment Station.
December 31, 1915.